

Contributions of Diaspora Remittances to Economic Growth & Development in Nigeria: A Housing Finance & Infrastructure Perspective 2000-2023

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Abstract

Migrant remittances remain a critical contributor to the economic growth and development of many emerging nations like Nigeria. The World Bank has estimated that nearly \$160 billion is transferred annually through official channels. The study highlights that the likely impact of remittances on economic growth depends on the purpose and how host countries and recipient households use their remittances. If remittances are used for infrastructure investments, human capital development, healthcare, and education, it could have a positive impact on economic growth and development in the long run. The study finds that remittances positively affect economic growth by supporting and expanding the limits on household income, as remittances potentially stimulate commercial activity and investment. The study also notes that remittances improve economic growth and contribute to development in countries with structured, open markets and innovative policies that encourage economic and institutional growth. Such innovative and open economies tend to allow the free flow of capital and labour, which are key to driving economic growth and contributing to housing and infrastructural development. The research noted that remittance flows in 2018 were estimated at 6.1% of GDP, with an estimated 87.5% of these flows used for construction and/or home purchase. The research employed a mixed-methods research approach, which involved collecting qualitative data from interviews and questionnaires and quantitative data from external sources. The research sample comprised 387 Nigerians in the diaspora, across multiple countries, in addition to 3 banks, 4 non-bank financial institutions, and a government agency. The study faced challenges in accessing diaspora data through Financial Institutions and NiDCOM due to proprietary data protection issues, and

a lack of information on informal peer-to-peer remittance activities, which financial institutions consider a major contribution to economic activities, domestic spending, housing development and construction activities.

Keywords

Diaspora, Remittances, Economic Growth, Development, Infrastructure and Housing Development, Social Impact

1. Introduction

The official record of remittances to low- and middle-income countries reached \$466 billion in 2017, according to (World Bank, 2018a) estimates. This represents an increase of 8.5% compared to 2016's \$429 billion. Global remittances to high-income countries increased from \$573 billion in 2016 to \$613 billion in 2017 (about 7.0% growth), World Bank (2018b).

According to the (United Nations, 2020), among low-income countries, India was the largest recipient of remittances with \$69 billion, followed by China (\$64 billion), the Philippines (\$33 billion), Mexico (\$31 billion), Nigeria (\$22 billion) and Egypt (\$20 billion) follows. It is worth noting that sub-Saharan Africa is home to several countries where remittances represent a significant share of GDP, including Liberia (27%), the Gambia (21%) and Comoros (21%). Also, (Knomad, 2019) notes that in addition to remittances from Nigerians living in the diaspora, the transfer of innovative practices and technological applications also contribute to the growth of Nigeria's GDP. As part of their contribution to economic development, Nigerians in the diaspora are known to partner with government agencies and local governments in real estate development. Real estate development initiatives by Nigerians in the diaspora are found in major cities such as Port Harcourt, Benin, Lagos and Enugu (Housing Cable, 2022a).

According to (Stears Nigeria, 2019), the activities of the Nigerian in Diaspora Organization (NIDO) are also important in relation to economic growth and development. NIDO was instrumental in proposing an institutionalized model for doing business in Nigeria. In addition, (Sebil & Abdulazeez, 2018) noted that NIDO successfully supported the Federal Government of Nigeria's first \$300 million diaspora bond issue to increase the country's GDP for infrastructural and technological development. According to (PwC, 2019), the growth trends of Nigeria's remittance flows as a percentage of GDP from 2008-2018 are highlighted in **Figure 1** below.

The arguments and diverse views of industry stakeholders necessitated a study to assess the perception of financial institutions and Nigerians in diaspora to provide relevant stakeholders with reliable data for investment decisions, sustainable economic development through housing and infrastructure.

Information on the perceptions of Nigerians in the diaspora towards applying remittances to homeownership will enable the government, regulators, finan-

ciers and other stakeholders to have a clearer picture of the services and interventions needed to facilitate access to home ownership and infrastructure development by Nigerians in the diaspora. Also, towards making informed investment decisions on how best to improve home ownership through access to housing finance for Nigerians in the diaspora.

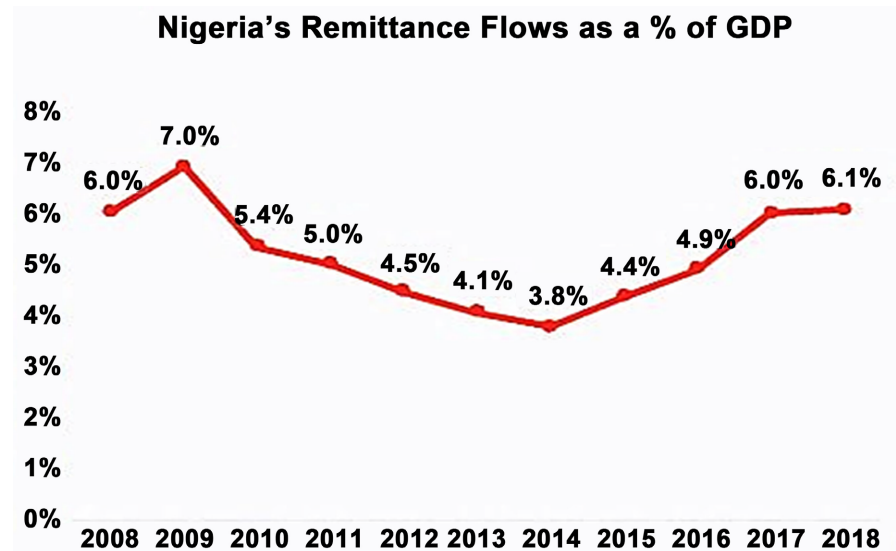


Figure 1. Nigeria's remittance as a percentage of GDP 2008-2018.

2. Literature Review

2.1. Diaspora Remittance & Contributions to Economic Development & Housing

Nigeria accounts for more than a third of migrant remittances to sub-Saharan Africa. According to estimates from (PwC, 2019), these inflows amounted to \$23.63 billion in 2018 (2017: \$22 billion) and represented 6.1% of Nigeria's GDP. Migrant remittances in 2018 accounted for 83% of the federal government's 2018 budget and 11 times foreign direct investment inflows over the same period. Nigeria's remittances were also 7.4 times the \$3.4 billion in net official development assistance (foreign aid) it received in 2017.

According to PwC estimates, migrant remittances to Nigeria were expected to increase to \$25.5 billion, \$29.8 billion and \$34.8 billion in 2019, 2021 and 2023, respectively. Also (PwC, 2019), expects remittances to Nigeria to almost double over a 15-year period from \$18.37 billion in 2009 to \$34.89 billion by 2024. According to the (United Nations, 2020), the growth of remittances is influenced by global economic forces that can encourage or hinder the flow of remittances, other factors affecting the flow of remittances include the increase in emigration rates, economic conditions in resident countries and the economic fundamentals of the Nigerian economy.

According to (Mohr, 2019) and (Pew Research Center, 2019a), in terms of diaspora remittances to Nigeria, the United States leads with one-third of total re-

mittances to Nigeria, followed by the United Kingdom with 20%, followed by Cameroon with 12% and Italy with 5%, Ghana and Spain by 4%, Germany and Benin by 3% each, Ireland, Canada, Gabon, Saudi Arabia, South Africa and Niger by nearly 2%, location of Nigeria's remittances are highlighted in **Figure 2** below.

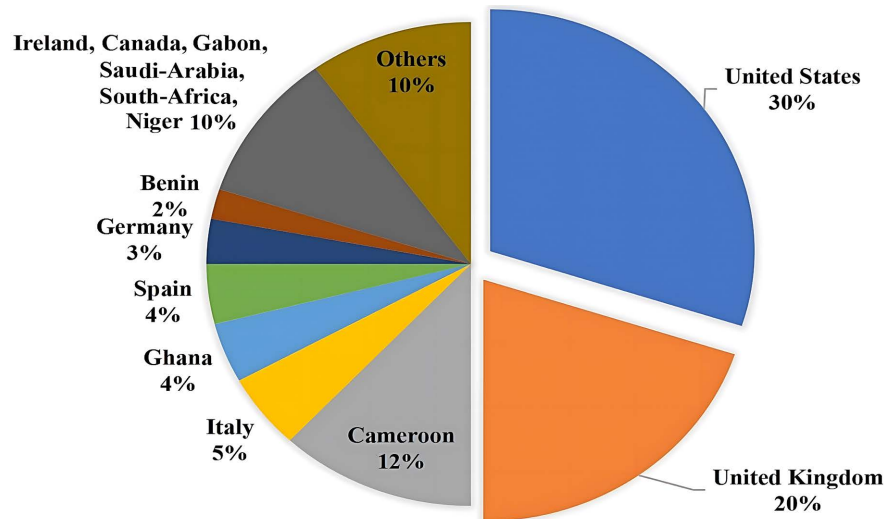


Figure 2. Location of Nigeria's remittance receipts.

As of 2020 according to (UNCTAD, 2018) and (United Nations, 2020) estimates, the number of international migrants worldwide stood at over 300 million (3.8% of total population). According to (Statista, 2023), there were 1.67 million emigrants from Nigeria in diaspora. However, the official records do not include those born of Nigerian parents in the diaspora who hold citizenship of their birth countries. Also, (Vanguard News, 2017), notes that according to the Nigeria in Diaspora Commission records, there were about 15 million Nigerians in the diaspora in 2017. These diasporans mostly account for the remittance flows to Nigeria. The (World Bank, 2021a) estimated that international remittances grew 10% from \$633 billion in 2017 to \$689 billion in 2018, and emerging countries acquired 77% or \$528 billion of these inflows. The list of countries with the most remittances as of 2021 is indicated in **Figure 3** below.

According to the (Pew Research Center, 2019b), Nigerians can be found in most countries of the world. Nigerians live in large numbers in the United States and the United Kingdom, followed by South Africa, the United Arab Emirates, and other European countries such as Italy and Spain. The Migration Policy Institute found that 29% of the Nigerian diaspora over the age of 25 have a master's degree, PhD, or advanced professional education, compared to 11% of the total United States of America population.

This survey was based on an analysis of 2009-2013 data from the United States of America Census Bureau. These survey facts, along with the typically close family ties of Nigerians, also mean that they tend to send slightly higher remit-

tance averages than other migrant groups. According to the (United Nations, 2020) remittances are income received by households from foreign economies, mainly from the temporary or permanent movement of people to these economies. Remittances include cash and non-cash items that flow through formal channels, such as wire transfers, or through informal channels, such as money or goods moved across borders.

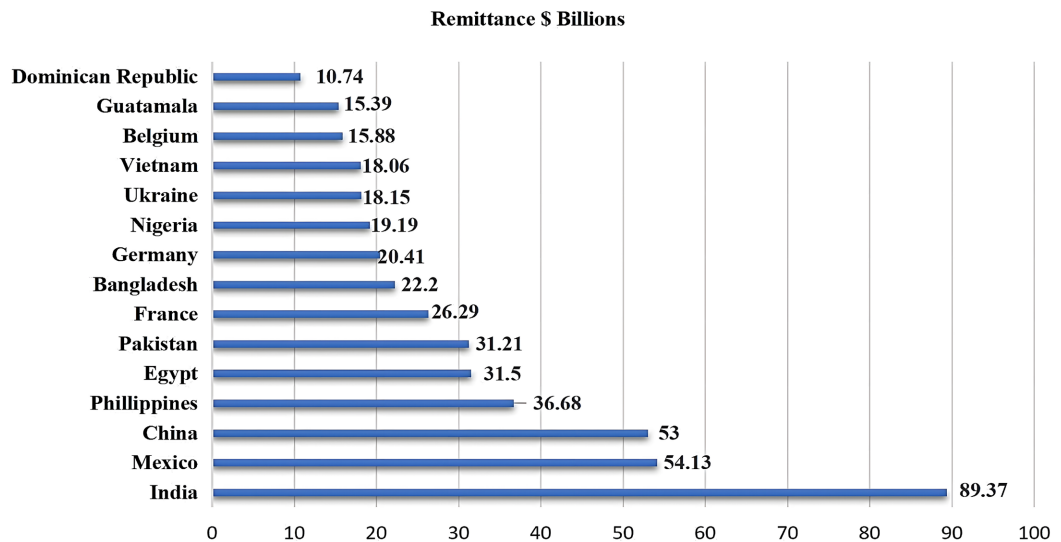


Figure 3. List of countries with the most remittances as of 2021 (source Statista, 2023).

The importance of remittances lies in the role they play in the economy. Against increasing migration, lower growth projections, declining living standards and increasing uncertainty, remittance inflows have been forecasted by (PwC, 2019) and the (World Bank, 2021b) to grow over the next 5 - 10 years. Remittances in terms of socio-economic support have been found to help poorer beneficiaries meet basic needs, finance cash and non-cash investments, fund education, support new businesses, service debt and basically stimulate economic growth. Empirical studies show that the primary benefit of remittances to host households is an improvement in their overall well-being.

According to (Adeseye, 2021) and other analysts, 70% of remittances are for consumption, while 30% of remittances are for investment. The (World Bank, 2019) estimates that global remittances increased by 10% to \$689 billion in 2018, up from \$633 billion in 2017, with developing countries receiving 77% of total inflows, or \$528 billion. India, China, Mexico, Philippines, Egypt, and Nigeria are amongst the world's largest recipients of remittances, together accounting for about 36% of total inflows.

2.2. Government Policies, Trends & the Impact on Diaspora Remittances on Infrastructure & Housing

According to (Business Day Newspapers, 2019), official remittances have exceeded Nigeria's oil revenues for four consecutive years. Since many transactions

are not recorded or are conducted through informal channels (peer-to-peer), the actual volume of remittances into the country is arguably higher. In 2018, migrant remittances to Nigeria were \$25 billion, representing 6.1% of GDP. According to (Business Day Newspapers, 2019) and (PwC, 2019), this also represents a 14% year-over-year increase over 2017 revenue of \$22 billion. The 2018 figure represents 83% of the federal government's 2018 budget and 11 times foreign direct investment inflows over the same period. Nigeria's remittances were also seven times larger than the net official development assistance (foreign aid) it received in 2017 (\$3.4 billion).

The (United Nations, 2020) states that Nigeria's official remittance records indicate lower levels than actual transfers through informal and unofficial channels. Remittances through informal channels can increase globally recorded flows by at least 50%. In 2018, the sub-Saharan Africa (SSA) region received a small share of global remittances, with Nigeria accounting for more than a third of regional inflows. Despite accounting for a small percentage of global remittances, official remittances to sub-Saharan Africa grew by 10% to \$46 billion in 2018. The (World Bank, 2021b), remittances to the region increased by 4.2% in 2019 due to the slowdown in global growth. It is therefore imperative that countries in the region, especially Nigeria, capitalize on this trend in strategic economic decision-making. In 2018, the largest remittances to Africa came from Egypt and Nigeria.

According to the (World Bank, 2021b), remittances sent to SSA through informal channels account for 45% - 65% of formal turnover, significantly higher than in other regions. Overall, remittance flows are expected to continue to increase due to factors such as strong regional economic growth forecast and large intra-regional migration flows from the SSA region. Recognizing the strategic importance of the Nigerian Diaspora, the Federal Government in July 2017 signed into law the Commission on Nigerians in the Diaspora. The Act created the Nigerians in Diaspora Commission (NiDCOM), an organization established to attract and utilize human capital, and the material resources of this demographic towards the socio-economic, cultural and political development of Nigeria.

According to (Sebil & Abdulazeez, 2018), the Nigerians in Diaspora Commission has launched various initiatives to contribute to housing and mortgage development such as the Diaspora Real Estate Platform in partnership with housing developers to facilitate access to credible real estate from accredited developers including direct purchase as well as provide financing through mortgage loans (housing finance).

Also (Bloomberg, 2023), noted that NiDCOM also facilitated the establishment of the Diaspora NHF Mortgage Scheme by the Federal Mortgage Bank of Nigeria, which offers mortgage loans to Nigerians in the diaspora to build or buy houses in Nigeria. One of NiDCOM's flagship projects for housing development is the Diaspora City project established by the Federal Housing Authority (FHA)

in the Federal Capital Territory of Abuja on an area of over 675 hectares with the aim of delivering over 17,000 housing units of various types, which create limitless, value chain and opportunities with a projected value of over 300 billion Naira (\$700 million).

According to (Abiola, 2022) and (Northcourt, 2023), Nigeria's real estate sector grew by 10.8% in the first quarter of 2022, up 7.3% from the last quarter of 2021. Between January and March 2022, the housing sector made a positive contribution to the country's GDP. According to (Adeseye, 2021) and (Northcourt, 2023), the performance of Nigeria's housing and real estate market is largely linked to increased investment from the diaspora community as the dollar continues to strengthen locally against the Nigerian local currency the Naira.

Regulatory wise, Nigeria does not lack policies to address the pervasive problems in the infrastructure and housing sector. In highlighting this situation, (Owotemu et al., 2021) notes that though targets for housing development and provision remain elusive, this has been partly due to implementation and oversight failures, uncoordinated policies, increased terrorism, and macroeconomic obstacles.

According to (Owotemu et al., 2022), both government and private sector stakeholders continue to collaborate and seek ways to close the infrastructural and affordable housing gaps, build industry capabilities and capacities, and ensure that professional values and ethics are respected in the industry through housing and infrastructure focused Public Private Partnerships.

In its report, (Bloomberg, 2023) highlighted that these proposed collaborations which started in 2017 will be replicated in various urban centers and states in Nigeria such as Port Harcourt, Benin, Lagos, and Enugu. According to the Nigerian in Diaspora Organization (NIDO), with a current group of over 1900 committed and verified off takers amongst the diaspora, the project is being institutionalized as a model for doing real estate business in Nigeria (Sebil & Abdulazeez, 2018).

These collaborations include the ongoing lobbying efforts for the review of the NHF and FMBN act to allow for recapitalization and increased efficiency by various stakeholders and provision of housing loans for Nigerians in diaspora through NiDCOM.

As part of the contribution to housing development, the Committee of Nigerians in Diaspora has partnered with the Federal Mortgage Bank of Nigeria (FMBN) and the Central Bank of Nigeria (CBN) to facilitate the contribution of Nigerians in the Diaspora to the National Housing Fund (NHF). This initiative will provide access to loans of N50 million Naira (\$80,000 - \$100,000) for Nigerians in the diaspora to purchase homes in Nigeria.

In addition, (Sebil & Abdulazeez, 2018) noted that NIDO supported the successfully subscribed \$300 million diaspora bond issue aimed at expanding GDP growth by investing in infrastructure and technology development across different locations in Nigeria. The Mortgage Bankers Association of Nigeria, in partnership with local financial institutions, held annual Diaspora Housing

Finance Conferences in the United Kingdom and the United States of America to promote real estate investment portfolio with a value of N120 billion Naira (\$258 million) in 2022.

2.3. Theoretical Review

Migrant remittances represent a significant financial flow in terms of general economic activities. These remittances are private funds transferred by migrants to their home countries and have been recognized for their potential to influence economic development.

Migrant remittances play a crucial role in the economic development of countries, especially in the developing world. The theoretical grounding for the relationship between migrant remittances and economic development can be drawn from several theories and empirical studies. In a World Bank report by (Junaid, Indermit, & Dilip, 2023), these scholars stated that remittance flows to low- and middle-income countries exceeded foreign direct investments, official development assistance, bank lending and portfolio investments in 2022 alone.

Also (Junaid, Indermit, & Dilip, 2023), stated that if the migrant remittance process and transactions become more affordable it could unravel an increase in economic potential and social development. According to (Junaid, Indermit, & Dilip, 2023), **Figure 4** below is a breakdown of external resource flows to developing countries (excluding China) from the year 2000-2022.

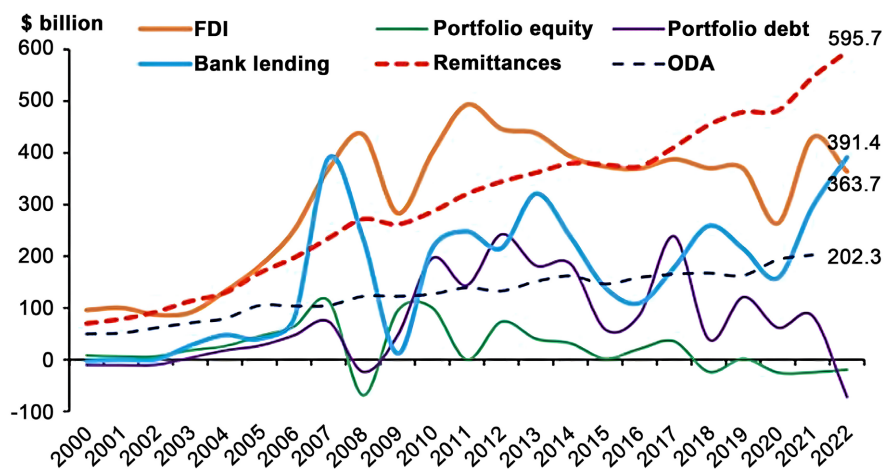


Figure 4. Breakdown of financial flows to developing countries.

Theories like the New Economics of Labour Migration (NELM) as espoused by (Abreu, 2010) and (Oso, Kaczmarczyk, & Salamońska, 2022) suggest that remittances alleviate budget constraints and act as a form of insurance, enabling households to invest in human capital and entrepreneurship, which in turn fosters economic development.

This is supported in previous studies such as by (Stark & Bloom, 1985) showing that remittances contribute to education and health, leading to a more productive workforce. The New Growth Theory suggests that economic growth is

driven by knowledge, innovation, and human capital. Remittances can be invested in education and health, improving the human capital stock of a country and fostering innovation and knowledge creation. In terms of theories like the dual labour market theory, (Sert & Erenler, 2020) and (Vasile et al., 2023), this theory suggests that remittances can alleviate labour market pressures in countries with excess labour by providing an outlet for employment abroad, while also bringing in financial resources.

In addition, concepts like the Solow-Swan growth model, can be adapted to include remittances as a factor that increases the steady-state level of per capita income by enhancing capital accumulation and productivity growth according to (Barossi-Filho, Silva, & Diniz 2005). Remittances can be seen as a form of savings that contribute to the capital stock of an economy.

The Solow-Swan growth model, which emphasizes the role of capital accumulation, technological progress, and labour growth in economic development, can be applied to understand how remittances contribute to capital accumulation in the migrants' home countries, potentially leading to economic growth.

Furthermore, as per the work of (Yonemoto, 2021), the Dependency theory posits that remittances can lead to a form of dependency, but this is counteracted by the argument that remittances can be directed towards productive investments, reducing reliance on external aid and fostering self-sustained growth.

While scholars like (Bueno & Prieto-Rosas, 2019), are of the opinion that remittances can be viewed through the lens of the World systems theory as a means of transferring wealth from the core (developed countries) to the periphery (developing countries), potentially altering the dependency relationship. Scholars like (Jürgen, Elina, & Papa, 2012) have also highlighted the contributions of remittances and migration as a social impact mechanism that contributes towards social resilience and innovation in relation to sustainability and climate adaptation as indicated in Figure 5 below of the conceptual framework by (Jürgen, Elina, & Papa, 2012) adopted for this study.

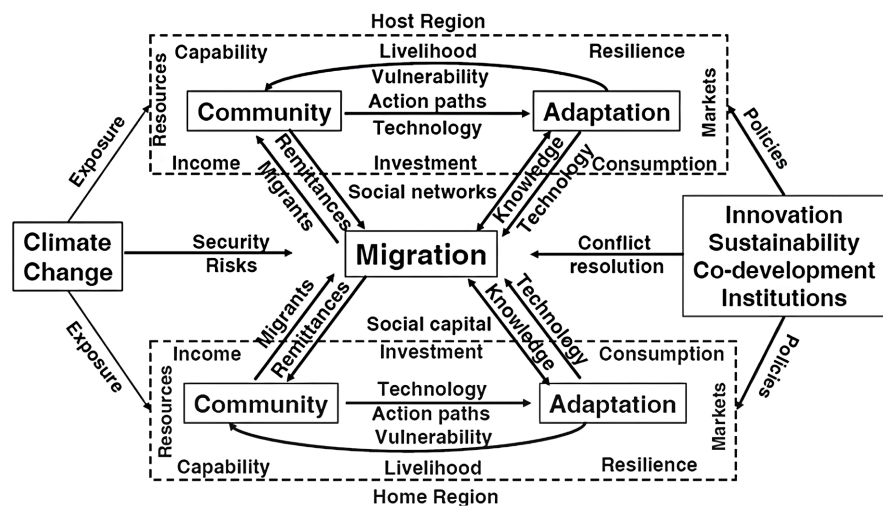


Figure 5. Adopted migration & remittance conceptual framework.

Also, in evaluating the concept of social remittances or migration and development theory, scholars like (Kane 2021) refer to the impact of remittances in terms of flow of ideas, behaviours, identities, and social capital. While (De Haas, 2007), also noted that remittances contribute to economic development by transforming social structures and economic practices in the migrants' home countries.

These theories also posit that migration and remittances can lead to a 'brain gain' rather than a "brain drain," as the prospect of migration can incentivize individuals to acquire education and skills. Further theoretical grounding for the relationship between migrant remittances and economic development can also be drawn from earlier economic theories and concepts such as the following:

Classical Economic Theory: Classical economists looking at remittances from the perspective of Adam Smith may argue that remittances can lead to a comparative advantage by allowing countries to specialize in certain sectors where they have an edge. Remittances can provide the necessary capital for investment in areas where countries have competitive edge, potentially leading to economic growth.

Keynesian Economics: From a Keynesian perspective, remittances can be seen as a form of government-independent stimulus. By increasing the disposable income of households, remittances can lead to increased consumption, savings, and investment, which in turn can stimulate economic activity and reduce unemployment.

In totality, these theoretical sources provide evidence and a basis for discussions that link migrant remittances to various aspects of economic growth and development, supporting the conceptual frameworks outlined above. In summary, by investing remittances in productive sectors, developing economies can leverage these funds to bolster economic development and improve social welfare.

The literature suggests that the effects of remittances are multifaceted and context-specific, shaped by the motivations of migrants, their development status, government policies and the institutional settings of their countries of origin. In terms of linkages, it is also important to consider theories that link migrant remittances to development by evaluating the role remittances play. These include the following:

Remittances & Economic Development: Migrant remittances are seen as a significant source of foreign exchange and have both positive and negative effects on development (Alpaslan et al., 2021). While (Glytsos, 2002), had earlier noted that remittances also play a crucial role in providing additional capital in economies with low income and savings like Nigeria.

Impact on Human Capital: Scholars like (Dimova, 2017), provide insights into how migration affects regional and national economies and the role of remittances in this process. Migrant remittances have a significant impact on human capital, as measured by per capita health expenditures and gross secondary

school enrolment. (Dimova, 2017) further highlights that the impact of remittances on education is the highest in low-income countries, followed by middle-income and upper-middle-income countries.

Impact on Economic Growth: Scholars like (Glytsos, 2002) and (Khan, 2024) note that remittances have a positive impact on economic growth, as measured through real GDP per capita. (Khan, 2024), however further explains that macro studies demonstrate particularly mixed and even negative direct effects of remittances on economic growth such as increased level of cash in circulation fueling inflation.

Impact on Consumption and Investment: Scholars like (Alpaslan et al., 2021), also reviewed the economic effects of remittances on migrants' countries of origin, focusing on household-level impacts and country-level outcomes, while (Khan, 2024) has noted that remittances have overall positive effects on consumption, particularly on durable goods for not-too-poor households. (Khan, 2024) further noted that remittances also demonstrate positive effects on households' agricultural production, household expenditures on education, and physical capital investment and entrepreneurial activities.

Impact on Social Welfare: (Glytsos, 2002) and (De Haas, 2007) are also of the consideration that remittances from expatriate labour can have a positive impact on household welfare, especially in developing countries. These scholars also note that remittances also have the potential to improve well-being, stimulate economic growth, and reduce poverty directly and indirectly.

Impact on Inequality: In evaluating the effects of migrant remittances on social constructs like inequality, (Khan, 2024) and (De Haas, 2007), are of the opinion that the effects of remittances on inequality are much more ambiguous. However, (Khan, 2024) further notes that both household and macro-level studies suggest mixed results related to the impact of remittances on inequality.

Policy Implications: (Glytsos, 2002), in an early research notes that in terms of policy implications, findings suggest an allocation of remittance inflows into sectors that bolster economic development and improve social welfare. (Glytsos, 2002) further suggested that developing economies also consciously formulate effective policies for diverting remittances to productive sectors.

2.4. Literature Gap

Empirical evidence supports these theories, indicating that remittances have a positive impact on economic growth, health, and education in developing countries. However, the effects are context-specific and depend on the efficient allocation of remittances to productive uses. This study's departure and addition proposes the conceptual framework linking migrant remittances with economic development theories, involving direct financial impacts, human capital development, and social and infrastructure transformation including housing. Effective policies are essential to harness the potential of remittances for economic development and growth.

Scholars like (Khan, 2024) have recently explored the impact of migrant remittances on human capital and economic growth in developing countries, using data from 1995 to 2020 across 61 developing nations.

According to (Khan, 2024) and (De Haas, 2007), it is essential to note that though multifaceted the effects of remittances on economic outcomes are context-specific and shaped by the heterogeneity of migrants, their motivations to migrate, and the development status and institutional settings in their countries of origin.

It is therefore important to consider these factors when applying this framework to specific contexts when evaluating migrant remittances to socio-economic development such as its specific contributions to infrastructural and housing development. This also includes examining the remittance-development relationship, inclusive of aspects such as motivations such as home ownership, infrastructure development, poverty reduction, gender perspectives, and macro-economic trends like climate change.

3. Methodology

The methodology for this survey report involved the collection of primary and secondary data to ensure accuracy and objectivity. The primary data was obtained through questionnaires administered to Nigerians in the diaspora, who are engaged in various fields of endeavour across different countries. Secondary data was sourced from reliable databases and research publications. To ensure a representative sampling strategy, a stratified random sampling technique was employed. This involved dividing the sample of Nigerians in the diaspora into distinct subgroups based on relevant criteria such as country of residence. From each subgroup, a random sample was selected to participate in the survey, ensuring that different segments of the population were adequately represented.

The data analysis process was conducted using both descriptive and inferential statistical methods. Descriptive statistics provided a summary of the data collected, presenting insights into the general trends and patterns regarding diaspora remittances, economic growth, housing and infrastructure development related to economic growth. Inferential statistics were then applied to highlight possible correlations, thereby contributing to the validity of the findings.

To address the validity and reliability of the findings, several measures were taken. Content validity was ensured by consulting experts in the fields of infrastructure, housing finance and diaspora lending during the questionnaire design phase. Construct validity was assessed by employing statistical tests to confirm that the survey measures accurately captured the concepts they were intended to measure. Reliability was established through the use of consistent data collection procedures and the pilot testing of the survey instrument, which allowed for adjustments prior to the full-scale administration of the questionnaires.

3.1. Data Collection

An online survey link was shared across leading professional online platforms

with established interactions and sizeable following involving Nigerians in diaspora. Survey data through interviews was also collected from representatives of financial institutions via email.

The online survey poll lasted for a period of 8 - 12 weeks before the link was closed. In addition to the survey, we also had focused group discussions with representatives of local financial institutions that consisted of Bank and Non-Bank financial institutions towards gathering additional insights into the operations of the housing finance sector in Nigeria in relation to diaspora financial services, operations and product offerings.

3.2. Sample Size Determination

The sample size consisted of 387 completed responses received from individual respondents in Diaspora resident in different countries globally. In addition to the responses, we also held focused group discussions with the representatives of eight (8) institutions that consisted of six (6) financial institutions and (2) government agencies involved in diaspora relations, diaspora banking, housing and social infrastructure financing.

The study utilized a sample size of 387 respondents, which, according to the Survey-monkey online survey calculator, is representative of the opinions and arguments of the estimated 15 million Nigerians in Diaspora. This sample size was achieved with a 95% confidence level, indicating that the results derived from analysing the sample size are statistically significant when projected onto the estimated population of Nigerians living abroad.

The information for this calculation was sourced from the Nigerians in Diaspora Commission (NiDCOM) official database. The sample embodies the perspectives of both the Nigerian Diaspora community and financial institutions recognized as subject matter experts. Their insights are instrumental in assessing the viability of introducing mortgage lending to the broader Nigerian Diaspora market.

This approach ensures that the findings are reflective of a broad spectrum of experiences and expert opinions, thereby providing foundation for the study's conclusions on the impact of migrant remittances. Statistical analytic sampling was applied to the size of the study population to determine the margin of error to measure in percentage terms how much we expect this survey results to reflect the views of the overall diaspora population. In view of the market survey research, the exercise presents an opportunity to help uncover more information about diaspora motivations for remittances linked to homeownership and infrastructure development by Nigerians in diaspora. The statistical significance of the sample points to its ability to easily help reveal insights and give assurances about the accuracy of information derived from the survey.

The survey sample of 387 respondents was evaluated by using statistical analytic sampling calculator tool to determine the survey confidence level, margin of error and the adequacy of the sample size based on an estimated population of 15 million Nigerians in Diaspora according to NiDCOM. The outcome of the

statistical calculator is captured based on the formula and outcome in **Table 1** below,

$$\text{Sample size} = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \frac{z^2 \times p(1-p)}{e^2 N}}$$

N = Population size * e = Margin of error (percentage in decimal form) * Z = Z-Score.

Table 1. Tabular representation of statistical relevance of survey population derived from NIDCoM (Survey Study Data 2023).

Projected Population Size	15 million
Confidence Level (%)	95 Percent
Margin of Error (%)	5 Percent
Survey Sample Size	387 Respondents

3.3. Study Validity & Reliability

Primary and Secondary data were collected for this survey to ensure acceptable levels of accuracy and objectivity in comparing perceptions of Nigerians in Diaspora. This study employed a descriptive research design in a field survey format, engaging Nigerians in diaspora from various fields of endeavour across different countries. The responses obtained were analysed using descriptive statistical methods based on the data gathered through questionnaires administered to Nigerian emigrants and representatives of randomly selected financial institutions. To address potential biases and limitations, the study acknowledges the following:

Selection Bias: There is a possibility of selection bias due to the non-probabilistic sampling of financial institutions and the reliance on voluntary participation of Nigerians in diaspora. To mitigate this, the study expanded its reach by including a diverse range of financial institutions and employed targeted outreach to ensure a representative sample of the diaspora population.

Response Bias: Given the subjective nature of perceptions and preferences, response bias may occur. The study minimized this through the design of neutral, clear, and concise questionnaire items and by providing anonymity to respondents to encourage honest and unbiased feedback.

Data Limitations: The reliance on self-reported data can introduce inaccuracies. Cross-verification methods were implemented where possible, and the study design included follow-up questions to clarify any ambiguous responses.

Generalizability: The findings may not be fully generalizable to all Nigerians in diaspora due to the variability in diaspora experiences, yearly growth in diaspora population and the specific sample chosen for this study. The study's conclusions are therefore presented with caution, and opportunities for further study. In proactively identifying and addressing the above potential biases and

limitations, the study aims to enhance the validity and reliability of its findings and provide a more accurate reflection of the research subject matter.

4. Data Presentation, Analysis & Interpretation

This section deals with data presentation, analysis, and interpretation. The sample size for the financial institutions section of the survey consisted of responses received from Seven (7) financial institutions and the Nigeria in Diaspora Commission making a total of 8 institutional respondents. The sample also consists of 387 completed responses received from individual respondents in resident in different countries globally. The sample size represents the group of Nigerians in Diaspora (a subset of the study population projected to be about 15 million individuals). The feedback from these respondents was evaluated with descriptive statistical tools highlighting their socio-economic profile, demographic details, Country of residence, housing interest and preferences. The summary of responses is itemized as descriptive statistics. Below highlights location and age of respondents in **Figure 6** and **Figure 7** respectively.

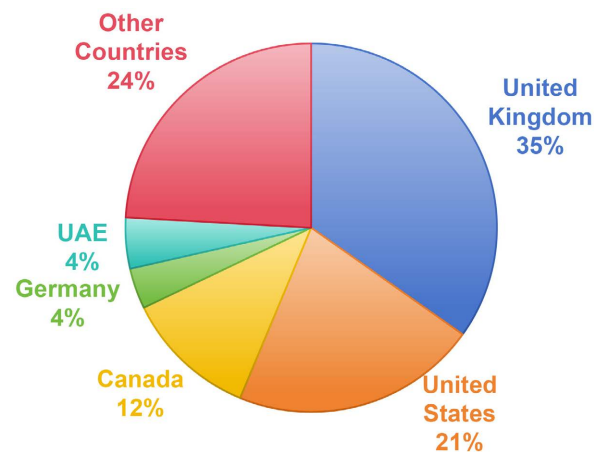


Figure 6. Representative location of respondents.

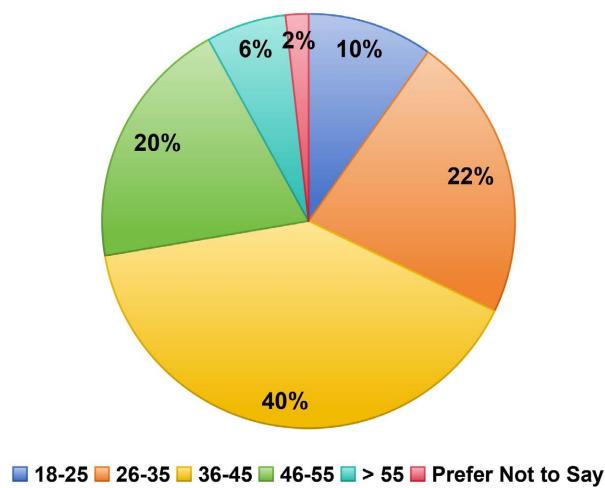


Figure 7. Representative distribution by age.

In terms of the interest from diaspora for housing, most of the financial institutions interviewed indicated that there is substantial demand linked to existing relationship ties by diasporans back home in Nigeria. Additional potential demand currently exists under the auspices of the “Diaspora Cities” Housing programme by NiDCOM. **Figure 8** below highlights annual income levels of Nigerians in diaspora in indicating demand capacity for remittances targeted at home acquisition.

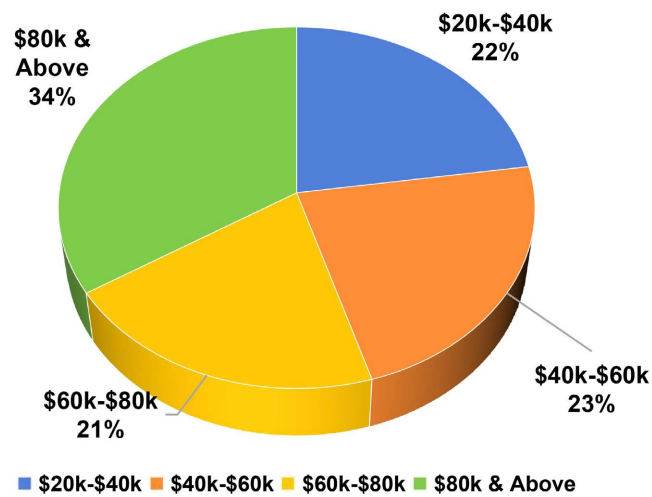


Figure 8. Distribution of diasporans by annual income levels.

NiDCOM currently holds data on 5000 prequalified diasporans with an effective offtake for home acquisition in Abuja and Lagos under the diaspora cities programme. At an average mortgage loan demand of \$100,000 per applicant, NiDCOM working with partner financial institutions requires about \$200 million to deliver an initial 2000 units or the equivalent of 40% of its existing pre-qualified housing and social infrastructure demand from the diaspora. **Figure 9** & **Figure 10** below highlight feedback from respondents on the importance of homeownership and preference for energy efficient and green homes to diasporans.

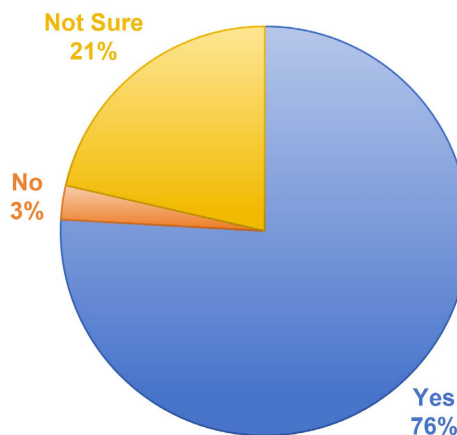


Figure 9. Response to importance of homeownership.

The findings suggest a correlation with the survey findings with 78% of respondents willing to acquire homes. The potential of diaspora remittances to contribute to infrastructure and housing growth correlates with the survey responses that indicated reasonably high earnings capacity with a combined 55% earning from \$60k - \$80k and above with a combined 67% of respondents looking to acquire homes for investment and retirement purposes back home as indicated in **Figure 10** below.

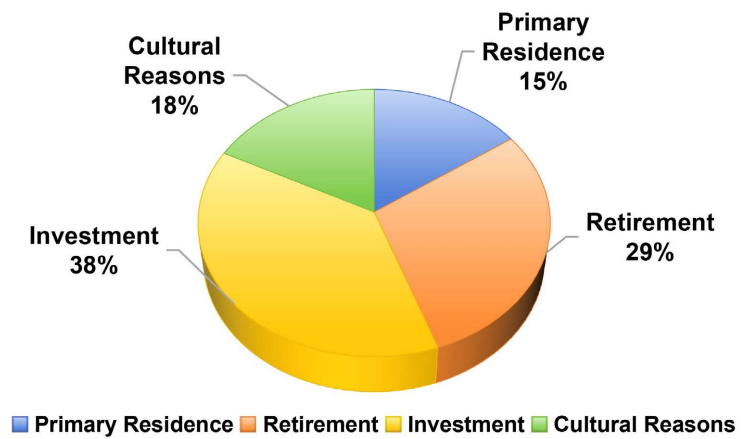


Figure 10. Response to purpose for homeownership.

In terms of international opportunities, the application of technology will introduce innovation and efficiency in the housing acquisition process. In terms of home options, the growth in sustainable and green buildings presents a major opportunity in housing development innovation, design, and market offerings in alignment with diasporan preferences and their possible concerns about climate change and sustainable living. As indicated by respondents in **Figure 11** below, 75% indicated that they would like to own an energy efficient and environmentally friendly home.

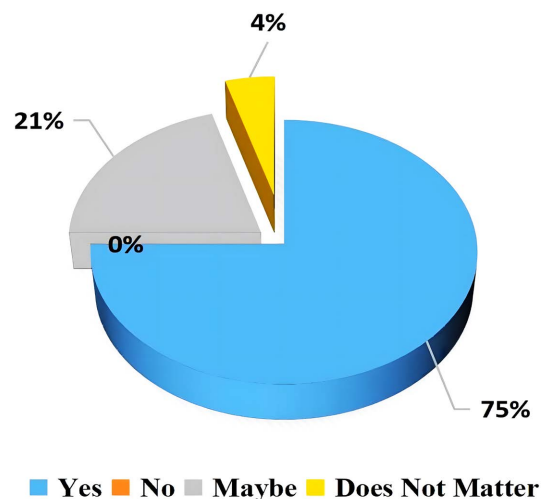


Figure 11. Response to preference for sustainable & green homes.

The analysis of data was also carried out using the statistical package for social sciences to conduct a correlation and regression analysis on the secondary GDP and Remittance data derived from Knomad (2024), (World Bank, 2019) and (Statista, 2023) data and publications highlighted in **Table 2** below.

The aim of the statistical analysis is to calculate the correlation coefficient, which measures the strength and direction of the relationship between two variables, and to create a regression model that predicts one variable based on the other.

Table 2. Nigeria's Diaspora remittance & GDP 2000-23.

Year	GDP \$Billion	Remittance \$Billion
2000	69.17	12.5
2001	73.56	12.72
2002	95.05	13.24
2003	104.74	14.72
2004	135.76	15.59
2005	175.67	16.89
2006	238.45	17.45
2007	278.26	15.4
2008	339.48	17.56
2009	\$295.01	18.37
2010	366.99	18.5
2011	414.47	18.87
2012	463.97	18.98
2013	520.12	18.97
2014	574.18	19.23
2015	493.03	19.47
2016	404.65	19.87
2017	375.75	22.10
2018	421.74	23.63
2019	474.52	25.5
2021	432.20	20.01
2022	440.84	19.80
2023	472.62	19.50

The correlation analysis, the Pearson correlation coefficient was calculated. This coefficient ranges from -1 to 1 , where 1 indicates a perfect positive correlation, -1 indicates a perfect negative correlation, and 0 indicates no correlation. A positive value would suggest that as the diaspora remittances increase, so does the GDP, and vice versa.

In terms of regression analysis, the relationship between diaspora remittances (independent variable) and GDP (dependent variable) was modelled thus:

$GDP = a + b \text{ Diaspora Remittances}$, where “ a ” represents the intercept and “ b ” the slope of the line. The slope “ b ” indicates the change in GDP for each unit change in diaspora remittances.

Correlation Analysis

The correlation coefficient (r) between Diaspora Remittance and GDP is 0.85, indicating a strong positive relationship indicated in **Table 3** below.

Table 3. Correlation analysis.

Model		Diaspora Remittance	GDP
Diaspora Remittance	Pearson Correlation		
	Sig. (2-tailed)	1.00	0.85
	N		
GDP	Pearson Correlation		
	Sig. (2-tailed)	0.85	1.00
	N		

Regression Analysis

Application of a linear regression model to examine the relationship between Diaspora Remittance (X) and GDP (Y) **Table 4** below.

Table 4. Regression analysis.

Model	Coefficient	Std.Error	t-statistic	p -value
Intercept	-1.23e+11	2.31e+10	-5.33	0.23
Diaspora Remittance	2.33e+09	3.45e+08	6.76	<0.001

Regression Model: $GDP = -1.23e+11 + 2.33e+09 * \text{Diaspora Remittance}$

Model Summary (Table 5)

Table 5. Model summary.

Metric	Value
R-squared	0.73
Adjusted R-Squared	0.72
F-statistic	144.2
p -value	<0.001

Coefficients

- Intercept: -1.23e+11 (p -value = 0.23)
- Diaspora Remittance: 2.33e+09 (p -value < 0.001)

Interpretation of Regression

The regression analysis suggests that for every dollar increase in diaspora Remittance, GDP increases by approximately \$2.33 billion. The model explains

about 73% of the variation in GDP.

Test of Hypothesis:

- Ho: No significant effect of diaspora remittances on the importance of homeownership and infrastructure development in Nigeria.
- H1: There is a significant effect of diaspora remittances on homeownership and infrastructure development in Nigeria.

The test of hypothesis was performed on the regression model. If the p -value associated with the slope (b) is less than the chosen significance level (commonly 0.05), we reject the null hypothesis (Ho) in favour of the alternative hypothesis (H1), suggesting that there is a significant effect of diaspora remittances on homeownership and infrastructure development in Nigeria.

Based on the regression results, we can reject the null hypothesis (Ho) that there is no significant effect of diaspora remittances on homeownership and infrastructure development in relation GDP. The p -value for the Diaspora Remittance coefficient is less than 0.001, indicating a statistically significant relationship.

Interpretation

The analysis suggests a strong positive relationship between Diaspora Remittance and homeownership and infrastructural development in relation GDP in Nigeria, supporting the alternative hypothesis (H2). The results indicate that a 1% increase in Diaspora Remittance leads to a 2.33% increase in GDP. This analysis is a basic model and may not capture other factors that influence the relationship between Diaspora Remittance homeownership and infrastructural development in relation to GDP like currency devaluation, monetary policy, peer-to-peer remittances and economic recessions or the impact of pandemics like Covid-19. Additional analysis and modelling may uncover additional insights into relationships between variables and mechanisms at play.

5. Summary and Recommendations

Remittances can have a strong impact on development at both the macro and micro levels, especially because of its multiplier effects when directed to economic activities like housing development and social infrastructure. To ensure that remittances are also directed to support housing finance, some recommendations have been made below:

Diaspora housing Initiatives: The creation of pooled investment vehicles targeted at home acquisition by diasporans is a trend that could become common in Nigeria. Such as diaspora cooperative investment vehicles, that enable diasporans to pool funds with regulatory safeguards and protection will encourage increased access to homeownership for and by diasporans.

Application of Fintech to Remittances: According to (Junaid, Indermit, & Dilip, 2023), Sub-Saharan Africa remains the most expensive place to send money, with an average cost of 9.4% (about 25% higher than the rest of the world). However, these costs have decreased over the past 10 years, partly due to

the rise of mobile money technology. We can replicate the impact that technology has made in fund remittance in housing and infrastructure development through fintech, artificial intelligence and Blockchain. These inputs will remove barriers posed by traditional credit processes and drive down the cost of administering diaspora mortgages.

Diaspora Housing & Infrastructure Funds: In view of the earnings capacity and housing demand from diaspora, the need could be solved with access to a deeper pool of funds. The demand assessment has thus far necessitated the establishment of the “Diaspora National Housing Fund Scheme” by the Federal government to deepen access to housing finance, property ownership and infrastructure development through remittances from Nigerians in diaspora. The proposed diaspora mortgage fund could also support the housing development value chain by providing guarantees to property developers to enhance the delivery process.

Investments in Climate Resilient Infrastructure: The growing concerns with respect to climate change and the contributions of the housing value chain to Green House Gas emissions have made it imperative to ensure finance and real estate and infrastructure sustainably complement each other. The interest indicated by diaspora survey respondents in wanting to own energy-efficient and environmentally friendly housing presents a huge opportunity for finance and investments, according to the (IFC, 2019), green buildings offer a \$24.7 trillion investment for emerging markets like Nigeria with a significant part of that investment being in residential buildings at \$16 trillion.

Summary

Many countries around the world, including Nigeria, have developed plans to attract investment from the diaspora community for national development. In essence, trust determines the extent to which the diaspora contributes to a country’s developmental activities. In most countries, sub-national governments (states) also take advantage of the vast potential of the diaspora. In summary, additional initiatives to spur an increased participation by diasporans in the local housing value-chain through diaspora mortgages are needed to turn remittances into productive investment capital for the growth and further development of the construction, and real estate sectors, which in turn creates jobs.

In terms of the feasibility of the contributions of diaspora remittances, it also possesses the potential to spur the development of other ancillary support amenities that support economic development, job creation, and human capital development while also addressing the existential deficiencies in local social infrastructure such as schools, hospitals, and roads. The growth prospects and size of diaspora remittances have been highlighted in their contribution to Nigeria’s housing and infrastructure market growth in recent years. According to market reports by (Housing Cable, 2022b) and (Northcourt, 2023), Nigeria’s diaspora remittances of over \$65.34 billion from 2019-2022 covering a three-year period

boosted Nigeria's economic activities. Housing cable also noted that the inflow accounted for 4% of Nigeria's gross domestic product (GDP).

In terms of capacity to drive infrastructure and housing market growth, Northcourt had earlier in their definitive real-estate market report for 2023, noted that Nigerians in the diaspora are not only high earners but also contribute significantly to 5% of the country's GDP. Northcourt (2023) had also noted that developers in leading markets like Lagos, Abuja and Port Harcourt have attributed about 70% - 80% of their real estate sales to diaspora clients seeking investment on the back of the appreciation of the dollar against the Naira there giving remittances from diaspora significant purchasing power parity.

Diaspora remittances offer a huge opportunity for infrastructure and real estate financing, in view of the fact that from funds remitted to Nigeria annually from the diaspora market, about 70% of remittances are spent on household essentials including education, while an outstanding 30% is spent on home acquisition related activities and in terms of the last 3 years that would imply that about \$19.6 billion cumulatively went into housing and its attendant social infrastructure with strong implications for growth.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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